

DOCUMENT RESUME

ED 185 402

CE 025 065

AUTHOR Brown, Hamilton B.
TITLE Continuing Medical Education for National Health Service Corps Personnel. A Manual for Program Directors.
INSTITUTION New Mexico Univ., Albuquerque. School of Medicine.
SPONS AGENCY Health Resources Administration (DHEW/PHS), Bethesda, Md. Div. of Medicine.
CONTRACT 231-77-0039
NOTE 56p.: For related documents see CE 025 063-064.
EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS Administrator Guides: Adult Education: *Continuing Education: Health Occupations: *Medical Education: National Surveys: *Physicians: *Planning: *Rural Areas
IDENTIFIERS National Health Service Corps

ABSTRACT

This manual is directed to those involved with National Health Service Corps (NHSC) in providing clinical support services and continuing education to NHSC physicians. Following an introductory section, the first of three additional sections defines the purpose of clinical support systems as being twofold: first, to support the physician as he adjusts to his new isolated role, and second, to fill the gaps in his training. The second section provides a brief discussion of the scope of clinical support service. Section 3 discusses seven clinical support services objectives and critical concepts: to create and maintain an innovative and responsive continuing medical education project, to maintain close personal contact and clear lines of communication with assigned NHSC personnel, to maintain a primary care orientation to the project, to develop an in-depth understanding of the needs of the NHSC practitioners, to provide such clinical support activities as necessary to the NHSC practitioners, to provide continuing education programs, and to carry out a continuous evaluation of the project. Appended are the results of a survey of national health service corps and private physicians that sought to determine physician satisfaction with rural practice and ways the medical center might intervene to improve the degree of satisfaction. (LRA)

* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *

CONTINUING MEDICAL EDUCATION
FOR
NATIONAL HEALTH SERVICE CORPS PERSONNEL

A MANUAL FOR PROGRAM DIRECTORS

BY

Hamilton B. Brown, M.D., M.P.H.
Project Director
National Health Service Corps/CME Project
University of New Mexico School of Medicine
Dept. of Family, Community, & Emergency Medicine
Albuquerque, New Mexico 87131

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY.

The preparation of this manual was supported by the Department of Health, Education, & Welfare Contract Number 231-77-0039

MAY 27 1980

TABLE OF CONTENTS

	<u>PAGE</u>
1. INTRODUCTION.	1
2. WHAT DOES CLINICAL SUPPORT MEAN?	1
3. WHAT IS THE SCOPE OF CLINICAL SUPPORT SERVICES?	2
4. CLINICAL SUPPORT SERVICES OBJECTIVES AND CRITICAL CONCEPTS.	4
TO CREATE AND MAINTAIN AN INNOVATIVE AND RESPONSIVE CME PROJECT	4
TO MAINTAIN CLOSE PERSONAL CONTACT AND CLEAR LINES OF COMMUNICATION WITH ASSIGNED NHSC PERSONNEL	6
TO MAINTAIN A PRIMARY CARE ORIENTATION TO THE PROJECT.	7
TO DEVELOP AN IN-DEPTH UNDERSTANDING OF THE NEEDS OF THE NHSC PRACTITIONERS.	8
TO PROVIDE SUCH CLINICAL SUPPORT ACTIVITIES AS NECESSARY TO THE NHSC PRACTITIONERS TO MAKE THEIR EXPERIENCE IN THE CORPS ENJOYABLE AND MEDICALLY REWARDING	10
TO PROVIDE CONTINUING EDUCATION PROGRAMS	11
TO CARRY OUT A CONTINUOUS EVALUATION OF THE PROJECT SO THAT IT CAN CONTINUE TO MEET THE ABOVE OBJECTIVES.	16
5. CONCLUSION.	20
6. APPENDIX A.	21
7. APPENDIX B.	26
8. APPENDIX C.	43
9. APPENDIX D.	46

INTRODUCTION

The National Health Service Corps is committed to the principle of providing support services to physicians and physician extenders who are working for the Corps. This manual is directed to those who are involved with NHSC in providing some kinds of clinical support services and continuing education to NHSC physicians in the field.

The manual is a distillation of the experience learned at the University of New Mexico School of Medicine in our National Health Service Corps/Continuing Medical Education Demonstration Project. We hope that the information will be useful to you as you try to provide these services to your constituents in the field. We understand that there is a tremendous variety in projects and their organization; from a project of a single department in a medical school to a component of an Area Health Education Center. Therefore, we will not address organizational issues as much as focus on some of the educational principles and general practices that we found to be important in our demonstration project. We are assuming that each of the projects will relate to a Regional Clinical Coordinator in the HEW Regional Office, who will be a physician relating closely to the NHSC physicians in the field.

What Does Clinical Support Mean?

Most of the National Health Service Corps providers have recently completed their medical training in tertiary care institutions in large cities. Now these same physicians are thrust rather abruptly into rural clinics where they no longer have access to numerous consultants nor to the full spectrum of laboratory and radiologic aids. At the same time, it

is clear that no matter how carefully planned any given doctor's training is there will always be some gaps between what he was trained to do and the kinds of problems he actually sees in his practice. The purpose of clinical support systems for NHSC providers then is two fold: first, to support the physician as he adjusts to his new isolated role in the practice of medicine, to provide back-up support to ease his anxiety, and answer his questions until he becomes comfortable and develops his own referral and support systems in the local medical community; second, the role of clinical support services is to fill in the gaps in his training.

What Is The Scope Of Clinical Support Services?

A symposium was held in Albuquerque, New Mexico in February 1978 to develop a National Health Service Corps continuing medical education support system. In the proceedings of that symposium, a list of eight specific items were identified as the main components of a clinical support system. These were:

1. The need for a regional or local coordinator for any clinical support system.
2. The desirability of having a circuit-riding physician as a consultant-facilitator.
3. The need for telephone consultation directed toward a known consultant.
4. The need for a list of referral resources.
5. The need for cluster gatherings and regional conferences of NHSC assignees.
6. The need for some type of ongoing needs assessment.

7. The need for an on-site educational resource center.
8. The need for a mechanism to evaluate such a clinical support system.

These items were translated in our New Mexico demonstration project into an NHSC/CME Project office with a part-time physician director and a full time staff assistant assisted in the beginning by an educational specialist. The office was attached to the Department of Family, Community, and Emergency Medicine which provided clinical and planning support services. The objectives of the project are listed below:

1. To create and maintain an innovative and responsive CME project.
2. To maintain close personal contact and clear lines of communication with assigned NHSC personnel.
3. To maintain a primary care orientation to the project.
4. To develop an in-depth understanding of the needs of the NHSC practitioners.
5. To provide continuing education programs that are individualized to the specific needs of the practitioners, that are not covered by existing CME programs, and that are accessible to the practitioners in the field.
6. To carry out a continuous evaluation of the project so that it can continue to meet the above objectives.

These objectives are not necessarily universal. Each project needs to define its own. However, these specific objectives can serve as a framework to discuss concepts that we found to be important in implementing our clinical support system at the University of New Mexico.

CLINICAL SUPPORT SERVICES OBJECTIVES AND CRITICAL CONCEPTS

To Create and Maintain an Innovative and Responsive ME Project

There are plenty of continuing education offices and programs throughout the country. Therefore, the reason for your special project is not to make continuing education available to Corps physicians but to create a system where the individualized practitioner can relate to a clinical support system on a personal basis. One of the most important concepts is that the adult learner, i.e. the physician looking for clinical support and continuing medical education, is a self-directed learner and should be approached as such.

Malcolm Knowles coined the term "andragogy" to distinguish adult from childhood education which is generally referred to as "pedagogy". His book, The Modern Practice of Adult Education, covers in detail his concept of andragogy and its implications for any program in adult education. These concepts are particularly important for any program involved in continuing medical education for physicians. Some of Dr. Knowles' assumptions are outlined below.

"These assumptions are that, as a person matures, 1) his self-concept moves from one of being a dependent personality toward one of being a self-directing human being; 2) he accumulates a growing reservoir of experience that becomes an increasing resource for learning; 3) his readiness to learn becomes oriented increasingly to the developmental tasks of his social roles; and 4) his time perspective changes from one of postponed application of knowledge to immediacy of application, and accordingly his orientation towards learning shifts from one of subject-centeredness to one of problem-centeredness." *

* Knowles, Malcolm S., The Modern Practice of Adult Education, Association Press, 1976, page 39. Reprinted with the permission of the publisher.

For those who are interested or who have not been exposed to educational theory, these ideas are expanded upon in Appendix A. The main point is that your office should respond to the specific needs of the practitioner in the field.

Second, it is very important that the project make a particular effort to provide services that are designed around their problems. Malcolm Knowles talks about education as an art form. Too much continuing medical education is stereo-typed and repetitive. Knowles asks that the people who are planning projects look upon any educational endeavor as an art form.

"I use the concept "art form" broadly here, of course. Adult education programs cannot be an art form in the sense that poems, paintings, sculptures, cathedrals, plays, symphonies, and the dance are art forms. They cannot be free, creative expressions of human feeling that are ends in themselves. But, adult-education can possess many of the same qualities that cause the true art forms to be aesthetic experiences. They can be experienced as beautiful, plain, or ugly. And the proposition I am hypothesizing is that the aesthetic quality of an adult-education program directly affects its educative quality." *

So, not only should this project try to communicate and interact with the practitioners in the field, it should try to respond to their needs in innovative, attractive, and hopefully exciting, meaningful new ways. This is the challenge and the exciting part of this otherwise small inconspicuous project.

* ibid., page 129.

To Maintain Close Personal Contact and Clear Lines of Communication with
Assigned NHSC Personnel

The most important part of this project is going to be communicating effectively with practitioners in the field. The effectiveness of this project will probably depend on how well these interactions are established and maintained. The most effective, yet unfortunately most expensive, technique for opening lines of communication is a visit by the project physician to the practitioners in the field. This is important because it allows for a face-to-face dialogue in the physician's own territory. One can observe how the physician relates to his office staff, the kind of clinic he has, the kind of community he practices in, and, perhaps, participate in consultations with patients and thereby observe better how the physician actually relates to patients. In addition, this allows the project to demonstrate its commitment to rural practice. It is so unusual for physicians from the "ivory tower" to visit rural areas that there is real value in making this step. To be meaningful, a visit should last at least a couple of hours and perhaps include an informal luncheon. Therefore, given travel time, it will be relatively expensive. At the symposium mentioned above, both practitioners in the field and continuing education specialists stressed the importance of circuit-riding physicians who would get out into the community to know the people in the field. Therefore, although it is not probably measurable in cost effectiveness terms, resources spent on visiting each practitioner at least once would be well spent.

Another approach to improving communications with the practitioner in the field would be the development of a telephone consultation service or "Hotline". Once again at the symposium on Developing A National Health Service Corps Continuing Medical Education Support System, practitioners in the field stressed the importance of having a way to communicate directly with the medical center. A few states such as Alabama already have sophisticated telephone referral networks linking rural physicians to the tertiary care centers. For other less fortunate areas, it would be important to develop a system that puts the practitioner in the field in contact with a peer in the medical center. Experience using residents to answer calls has been disappointing in general. Therefore, the system has to be more sophisticated than just a WATS line at the medical center. There should be a mechanism to assure that the calling physician gets to talk with an understanding and responsive physician. Such a telephone consultation service provides at least two results. First, it offers a service to the new practitioner in the area. Often it takes several months for a practitioner to develop his own referral network. Until he is satisfied with his own referral patterns, it is useful for him to know that he can reach any specialist in the tertiary medical center through a single phone number. Second, it is another way for the project to demonstrate its responsiveness to specific needs of the provider in the field.

To Maintain a Primary Care Orientation to the Project

Most of the practitioners working for the NHSC in the field will be working in primary care fields: pediatrics, internal medicine, family practice. Many will have little or no inpatient exposure, yet most

were not trained to practice in an ambulatory setting. Therefore, it is very important that the CME project have an ambulatory primary care orientation to its activities. If primary care providers are not included in the project staff, a mechanism should be made for having them as consultants to the program. Their advice should be sought in all phases of planning educational programs because too often specialists focus their teaching on the management of the complex hospitalized patient. We also emphasized the role of the primary care physician by having a family practitioner from the faculty co-lead each of the workshops we held. His responsibility would be to pen the dialogue between the practitioners and the specialty clinician, and to make sure the discussion focused on the needs of ambulatory primary care physicians.

To Develop an In-Depth Understanding of the Needs of the NHSC Practitioners

There are two dimensions to assessing needs of the practitioners in the field. First, what are the needs for support programs; second, what specific kinds of problems are the practitioners having that should be met. The first relates to the types of programs that your CME project needs to develop and the second to the topics that should be addressed in continuing education programs.

Appendix B to this manual is a questionnaire developed at the University of New Mexico to assess interests in different kinds of support programs on the part of both NHSC physicians in the area and a selection of primary care physicians in rural practice in the state. This questionnaire might be useful to you in assessing whether your practitioners are interested in a variety of support activities that you might be able to initiate.

A summary of the field test of this questionnaire in New Mexico is also in Appendix B to give an idea of what we found to be important.

The other component of needs assessment is to identify topics for continuing education programs. Although one can go into a lot of detail identifying CME needs, the results of the symposium on Developing a National Health Service Corps Continuing Medical Education Support System mentioned above suggests that informal assessment of continuing education needs is as valuable as a formal questionnaire approach. The feeling was that formal evaluation of needs was too complicated and too time consuming for the busy physician. We have found that informal site visits and discussions are most appropriate for identifying basic areas of interest that are common to all of the practitioners. We followed up a series of site visits with a questionnaire mailed to all of our assigned practitioners asking for interest in possible CME topics. We tabulated the results by provider and topic in order to develop a master plan of topic areas of most importance to the practitioners in the field. From these basic data, we chose the subjects for our continuing education programs. We then called two or three practitioners to ask them what specific subtopics were of interest to them that they would like to have covered. This information from the field was then given to the specialist in the medical center to plan the continuing education conferences.

Sometimes it is hard to be sure that a physician's subjective feeling of CME needs is adequate since there may be deficiencies in his practice of which he is unaware. There are ways of identifying problem areas for continuing education that are perhaps more objective although also more

complicated. One approach that should be considered is using the advice of experts in the field. What common problems seem to be grossly mismanged when they reach the secondary or tertiary care centers in the area? If the PSRO organization provides data on quality of care, what problem areas are particularly apparent in the rural areas or in outpatient clinics? In addition, some physicians might be interested in techniques of formal self-assessment of their practice. In the manual addressed to NHSC physicians, we listed a number of possible ways physicians could carry out a self-assessment evaluation (See Appendix C). These include Wisconsin's Individual Physician Profile and the University of Illinois's Your Personal Learning Plan. These approaches probably would not appeal to the average physician since they would be time consuming, and many physicians would not see their value. However, they might be of interest to select physicians and would be particularly valuable in assessing the needs of your target population practitioners.

The important point is that before an effective continuing education program is developed the project staff needs to have a clear idea of educational problems felt by the practitioners in the field. Only in this way can you respond to their needs in a manner that is attractive and appropriate to the kinds of problems they are facing in the field.

To Provide Such Clinical Support Activities as Necessary to the NHSC Practitioners to Make Their Experience in the Corps Enjoyable and Medically Rewarding

NHSC sites are usually geographically and functionally isolated from the kinds of routine collegial interactions that are available to

practices elsewhere. These interactions are an important source of clinical support, and an informal means of continuing education, e.g. the "corridor consultation" or "doctor's lounge bull session". For the rural practitioner, your office can provide this type of support.

We have found that some of the most appreciated services were the regular visits by the project staff and the availability of the telephone consultation service, which is one form of colleague surrogate.

In addition, through our questionnaires, we have found rurally based physicians interested in several other programs that would be feasible. Many physicians would like a place where they could find other physicians to work as locum tenens. Many have expressed interest in serving as preceptors for medical students and house officers. They stated that such an affiliation would significantly contribute to their satisfaction with practice.

To Provide Continuing Education Programs

The most visible part of your project will probably be your continuing medical education activities. This is where you can apply the principles of andragogy and try to create an innovative and responsive series of programs. We have already talked about the importance of identifying the needs of the practitioners in the field. Here we will discuss the process that you would go through to design an effective educational project. For those of you who have not had much exposure to educational theory, the information here is expanded upon further in Appendix D.

Once you have a needs assessment prepared, you need to develop a series of learning objectives for the continuing education program. The

learning objectives should include a statement covering content of the session, and for this you may need to refine the needs assessment further. Second, the learning objectives should include a statement as to the type of behavioral change desired, whether it be learning knowledge, diagnostic-operative skills, problem-solving skills, or an attitudinal change. It is particularly important to sort out the type of behavioral change required since that will in large part determine the kind of session you will develop. These behavioral changes are discussed in greater detail in Appendix D.

Once you have developed learning objectives that include both the content and behavioral change desired, you need to choose the type of format that would most effectively reach that objective. Despite a great deal of research and exploration into new ways of providing continuing education for physicians, most programs follow the very traditional format of lecture or lecture followed by discussion. One of the major advantages of the NHSC/CME Project is that by working with a small group of physicians that you know fairly well, you can explore different approaches to continuing education that may in the long run be more effective and relevant to the practitioners' needs. Table I lists some of the formats for presenting educational material according to whether it is designed for an individual or for a group of participants. The purpose of this table is to show you the wide range of possible approaches to educational programs. It is the role of the project director to take the needs and interests of the practitioners as defined in your learning objectives and create programs to specifically meet their needs. These educational formats are also

TABLE 1

	<u>INDIVIDUAL</u>	<u>GROUP</u>
Reading	Reviewing journals Text books Literature search	Journal Club
Lecture	Audio digest	Traditional CME program
Repetition	Programmed instruction program	Programmed group instruction (Cardio-pulmonary resus- citation)
Discussion/workshop	Tutorial	Workshop
Demonstration	Video	Workshop demonstration
Practice Session	Mini-residency	Workshop with practical hands-on experience
Research	Conduct research within confines of the clinic	Participate in research project

expanded upon in greater detail in Appendix D.

Once the content and format of a program are determined, there are several tasks that must be carried out. Most importantly, you must take the time to prepare for it adequately and far enough in advance so you can have a clear commitment of the faculty you want and give the practitioners time to arrange their schedules. The following is a rough list of things which need to be covered in preparing for any particular program.

1. Faculty - Select the faculty according to the learning objectives you have. You should choose faculty on their ability to teach, not necessarily their status in the profession. Once you have selected your faculty, it is important to present them with your learning objectives so that they can tailor-make their presentation for your audience. It is important to make sure that faculty members do not come with a canned program that may or may not be appropriate to your practitioners' needs. This is why it is so very important to have developed your learning objectives before you begin talking to the faculty. It is probable that these objectives may be modified in discussion, but at least it gives you as program coordinator a framework to begin the discussion.
2. Facility - It is important early on to schedule the necessary rooms for the program. It is unfortunate to wake up the day of the conference and discover that somebody else has already scheduled a meeting in the room that you intended to use. With respect to the facility, you have to make sure that necessary audio/visual equipment is available, a blackboard or newsprint

board are available if needed, and, if you are serving refreshments, that these are ordered.

3. Continuing medical education credit - It is very important to submit applications for continuing education credits from the various accrediting organizations: American Academy of Family Physicians, the local Medical Society, the American Medical Association, the American Nursing Association, etc. Many of these organizations require at least a month to process these applications so you should submit them as soon as you have your preliminary curriculum designed.
4. Notification of NHSC staff - It is important that they be given an idea when the conference will be as soon as possible. It should be six weeks before the date of the conference at the very minimum.
5. Send out reminders - It is important to notify attendees of the conference two - three weeks before the conference so that they do not forget and to contact the faculty regularly so that they do not forget to prepare or to come to the meeting.
6. Arrange per diem, honorariums, etc. - The paper work should be filled out in advance so that all of the people assisting in the program are paid promptly after the event. This will ensure that the next time you ask those faculty members to participate they will be eager and willing to do so. It is also important to remember after the conference is over to give a note of thanks and feedback on how you felt the conference went.

To Carry Out a Continuous Evaluation of the Project so That It Can Continue
To Meet the Above Objectives

It is important to try and evaluate the overall effectiveness of the project, though you cannot let the problems of evaluation and the difficulties in quantitating educational changes get in the way of actually carrying out the activities of the project. It is clear that good methods for evaluating the effectiveness of adult learning activities are very difficult to develop, and those that are effective are often too expensive in terms of time and money to be practical. However, if you are serious about running a good project, you should make some sort of an effort to look at what you are doing and how you could do it better. There are three areas that need to be evaluated: the project goals, the results of any particular educational project, and how well the NHSC providers succeed in meeting their own learning goals.

Looking at the project goals first, we do have to reiterate that without a clearly defined set of goals in the beginning, it is hard to know whether the project is functioning successfully or not. Malcolm Knowles, the guru of adult education, suggests that for each project goal you ask questions that can be answered by data in one way or another. For instance:

1. To maintain contact with all NHSC personnel. Have you made a personal contact with all of the providers within the last six months? Can you give an accurate picture of how well the individual clinics are functioning at this point in time? Are you aware of which have significant problems right now?

How many of the practitioners in the field have felt free to contact you for advice and support services?

Once you have asked these questions of yourself, you need to collect data that can help you answer them. You can do this by examining your own performance or records, that is, how many times you have actually gone out into the country. You can interview practitioners when you talk to them in the field or by telephone calls. You can send a questionnaire into the field to elicit their opinions on certain aspects of your project. You can ask for a committee of experts to look at how your project is set up and whether they have any particular suggestions about how it could run better. This committee of experts can include some of the doctors in the Corps with whom you have had close working relationships.

Once you have finished collecting the data, it is important for you to look at the data, seriously evaluate how well you are doing, and be prepared to modify your project's goals accordingly. Only in this way will a project remain vital and appropriate to the people's needs in the field.

The second major area that needs to be evaluated is how effective is any given educational program that you conduct. Since the focus of adult education and continuing education for physicians is really personal growth and self-directed learning, one has to be careful not to make the evaluation process appear to be a grading exercise, which I think most of us remember as being demeaning. The program can be evaluated in a number of ways.

1. It is important to get the participant's view of how effective the program was. You need to ask questions that allow him to comment frankly on its effectiveness. If the questions are asked in a general frame of reference, it is too easy for the participant to check off the middle of the rating scale and not give you adequate feedback. Some questions that might be helpful are:

I think that in this session I learned:

a great deal quite a lot some little nothing

I am leaving this meeting feeling:

enthusiastic encouraged alright disappointed frustrated

The length of the session was:

too short short a little bit too long much too long

I am going to carry back to my practice the following points:

The faculty's presentation was:

Very Appropriate
To My Needs

Very Inappropriate
To My Needs

6 5 4 3 2 1

2. It is possible to give the participants a pre-test and follow it up with a post-test to see if there is any particular improvement. This pre-supposes that the faculty knows what the participants need to learn. It also pre-supposes that if you answer questions correctly, you will apply the correct answers to your practice.

3. Another approach would be to ask the participant before the conference to write down learning objectives that he feels are important for him to acquire in the program, and then on the same form ask him to evaluate how closely his objectives were met. From that, he can reformulate a new set of learning objectives that take into effect what he has now learned. This approach supports Malcolm Knowles' contention that evaluation from the individual's point of view should be less an evaluation of where you are as much as a rediagnosis of where you need to go from here. That is, after any given learning experience, you have to look at what you learned, your practice situation, and say, "What do I need to know next? Are there important things I still have not covered?"
4. A fourth approach would be to send a follow-up questionnaire 3 - 6 months after the program to ask whether the participants remembered anything of the session and if they put any of the knowledge into action in their practice.
5. Finally, if resources permit, you can actually carry out a chart audit of a few participants to see whether their practice conforms to the model set forth in the session.

The third area that needs evaluating was just touched on. That is, how effectively has the project met the practitioner's learning goals.

This pre-supposes that as a project coordinator you have an idea of what the practitioners would like to learn and you have stimulated them to develop objectives of their own. As time goes by, you and they work together to meet those needs and once you have made an attempt to help them in one area, you re-evaluate the situation and see where you want to go from there. This is rather idealistic but it may work for physicians in the field who are particularly dedicated to their own self-learning.

CONCLUSION

In conclusion, we have tried to distill some of the principles that we have found to be important in our NHSC/CME Project over the last three years. We have focused on the need to develop strong relationships with the providers in the field and to identify their particular needs for continuing education. We have summarized some educational theory that we have found relevant to our continuing education project. Finally, we have listed some of the tasks that need to be done in order to have a successful project.

We have found our project a meaningful way to get involved with NHSC providers who are working in the rural and underserved parts of our country.

APPENDIX A

ANDRAGOGY AS DEFINED BY MALCOLM KNOWLES

"Andragogy is premised on at least four crucial assumptions about the characteristics of adult learners that are different from the assumptions about child learners on which traditional pedagogy is premised. These assumptions are that, as a person matures, 1.) his self-concept moves from one of being a dependent personality toward one of being a self-directing human being; 2.) he accumulates a growing reservoir of experience that becomes an increasing resource for learning; 3.) his readiness to learn becomes oriented increasingly to the developmental tasks of his social roles; and 4.) his time perspective changes from one of postponed application of knowledge to immediacy of application, and accordingly his orientation toward learning shifts from one of subject-centeredness to one of problem-centeredness." *

SELF-CONCEPT

The process of maturation can be regarded as the process of a person taking more and more responsibility for his own life. Children enter this world completely dependent on their parents and on the adult society around them. As the child grows and particularly as he or she reaches adolescence, his self-concept moves in the direction of taking increasing control of his own life. Often the school system fails to recognize this development and tries to force the student into a passive dependant role. This is true even in medical school which, on the whole, tends to deny the self-directing nature of their students. The faculty defines the needs of their students, and students are required to listen to the lectures, carry out the laboratory experiments and read the literature chosen by the faculty as being most appropriate. Once physicians are in private practice, they are totally self-directing in control of their professional practice. It becomes increasingly anacronistic for them to return to a passive dependent role as a learner in continuing education courses.

* Knowles, Malcolm S., The Modern Practice of Adult Education, Association Press, 1976, page 39. Reprinted with the permission of the publisher.

Therefore, the medical school or the other institution that tries to produce effective CME programs must try to respond to the physician as a self-directed learner. Some of the implications regarding physicians' as self-directed learners are:

1. The learning climate should react to their self-directing feelings. The teacher must treat the students as adults, show interest in their actual situation, and respond to their needs.
2. The physician needs to participate in the diagnosis of his learning needs. The physician himself should determine what he doesn't know, what it is necessary for him to know in order to manage his patients better, and how he can best learn the material.
3. The physician should be involved as much as possible in planning his own educational program whether it be an individualized tutorial or a group type of experience.
4. The teacher is no longer expected to take the responsibility for what happens in the teaching-learning transaction. The physician student knows what he needs to learn and the teacher's role is primarily to be a facilitator and resource person to help the physician reach his own personal goals.
5. Rather than being graded, the physician should be encouraged to re-evaluate his own learning needs following the program. That is, he should determine for himself which of his determined needs have been met by a particular exercise, which have been modified, and which still remain to be answered. In that way, he can prepare himself for his next educational experience.

EXPERIENCE

An adult, obviously, has lived longer than a child and has accumulated an enormous volume of different experiences. In many cases, his experiences help define who he is and establishes his self-identity. An adult is what he has done, where he has been, what work he has done, and what work he has accomplished. If a particular learning experience ignores or minimizes the physician's past experience, it is not just the experience which is being rejected, he feels rejected as a person. Some of the implications of this are:

1. Because adults have a richer background of information, they can and should participate much more in their educational program. That is, workshops, simulation exercises, role playing take the physician's background into account more than lectures, reading, and canned audio/visual presentations.
2. There should be greater emphasis on practical applications that fit the physician's past experiences and needs.

READINESS TO LEARN

It is easy to recognize that children can only learn what they are developmentally ready to learn. A child cannot learn to walk before he has learned how to crawl. The same thing is true for adults. Each physician in practice will be going through certain developmental stages and the education program should be appropriate to him and his developmental situation. For instance, a physician going directly into practice will have concerns over his confidence and needs to learn how to establish a successful practice of medicine. A middle aged established physician will

have solved those problems and perhaps begin to play a role in community medical politics and perhaps takes on other civic responsibilities. As a physician, he may feel confident in caring for patients but defensive about keeping up with younger practitioners. An older physician will be adjusting to his strenuous workload and perhaps beginning to cut back and preparing for retirement. Different physicians will have different needs and will respond to different kinds of programs depending upon where they are in their life history.

ORIENTATION TO LEARNING

Most youthful students focus their learning on specific subjects so that they can advance in school, from grade school to high school, to college, from college to medical school. Physicians looking for continuing education are engaged in learning primarily in response to pressures they feel in their current medical practice. Therefore, education for physicians should be primarily responding to problems identified by the students.

How do I evaluate a child who is not growing well?

How has the use of antibiotics changed in the last 10 years?

Each physician who is concerned about his continuing education will come to any course or program with specific questions and specific concerns that should be met for the program to be successful. Some of the implications are:

1. Unlike the youth educator who is concerned with the orderly development of subject matter from grade to grade, the CME planner must be primarily attuned to the concerns of the physicians he will be working with.

2. The CME program should be focused less on classical departments and more specific problems. That is, rather than planning a "Review of Internal Medicine for Family Practitioners", the CME director should identify a series of specific problems family practitioners have in treating medical illness in adults and address those problems. This may appear to be semantic word juggling, but there is a critical difference in orientation. In the first case, one looks to the faculty internist to define the content; in the second, the physician in the field.

APPENDIX B

QUESTIONNAIRE FOR NATIONWIDE

NAME _____

ADDRESS _____

To complete the questionnaire, please circle your answer. When you have completed the questionnaire, please return it in the enclosed self-addressed envelope.

Thank you for your cooperation.

1. Age:

25 - 34

35 - 44

45 - 54

55 or more

2. Sex:

Female

Male

3. Marital Status:

Married

Single

4. Type of Practice:

Family Practice

General Internist

General Pediatrics

Specialist _____

5. Organization of Practice:

Solo

Partnership

Group (Greater than two)

6. Remuneration of Practice:

Fee for Service

Salary

7. Community Size:

Less than 5,000

5,000 - 10,000

10,000 - 20,000

More than 20,000

8. Number of years of internship and residency training:

1 year

2 years

3 years

4 years

5 years or more

9. Number of years you have been a practicing physician (excluding internship and residency):

Less than 2

2 - 4 years

5 - 9 years

10 or more

10. Number of years in current community:

Less than 2

2 - 4 years

5 - 9 years

10 or more

11. Do you feel the need for more practitioners in your area:

Not Needed

Greatly Needed

1

2

3

4

5

6

12. Are there specialties which you feel are needed in your area:

13. How useful would it be for the university to facilitate locum tenens for your practice:

Not Useful

Very Useful

1 2 3 4 5 6

14. In your present situation, obtaining CME credit to maintain licensure is:

Very Difficult

Very Easy

1 2 3 4 5 6

15. In your present situation, keeping abreast of medical knowledge relevant to your practice is:

Very Difficult

Very Easy

1 2 3 4 5 6

16. Please rate each of the following educational approaches in regards to maintaining your competence as a physician:

Not Helpful

Very Helpful

- | | | | | | | |
|---|---|---|---|---|---|---|
| a) traditional CME conference | 1 | 2 | 3 | 4 | 5 | 6 |
| b) traditional CME conference and ski weekend or equivalent | 1 | 2 | 3 | 4 | 5 | 6 |
| c) seminar with emphasis on discussion among peers | 1 | 2 | 3 | 4 | 5 | 6 |
| d) seminar with "hands on" clinical experience | 1 | 2 | 3 | 4 | 5 | 6 |
| e) individualized postgraduate clinical training at a medical school (1 week to 2 months) | 1 | 2 | 3 | 4 | 5 | 6 |
| f) self-study material that can be performed at your convenience | 1 | 2 | 3 | 4 | 5 | 6 |

17. Would it be helpful to you for CME programs to address:

	Not Helpful				Very Helpful	
a) Management planning for your office or clinic	1	2	3	4	5	6
b) Spouse adjustment	1	2	3	4	5	6
c) Cultural aspects of medical care	1	2	3	4	5	6
d) Intensive Spanish language instruction	1	2	3	4	5	6
e) Other _____	1	2	3	4	5	6
_____	1	2	3	4	5	6

18. Would you find on-site audio/visual CME presentations helpful in maintaining your competence as a physician:

Not Helpful				Very Helpful	
1	2	3	4	5	6

19. Please rate the potential usefulness of the following:

	Not Useful				Very Useful	
a) Videotaped grand rounds	1	2	3	4	5	6
b) Telephone conference journal club	1	2	3	4	5	6
c) Audio tape presentations	1	2	3	4	5	6
d) Studio-prepared instructional videotapes	1	2	3	4	5	6

20. Have you ever served as a preceptor for a student or House Officer:

Yes No

21. a) Are you interested in being a preceptor for a fourth year medical student or House Officer:

Not Interested

Highly Interested

1 2 3 4 5 6

b) To what degree would this contribute to your satisfaction as a practitioner:

Not At All

Very Much

1 2 3 4 5 6

22. a) Are you interested in being an attending physician in the University Medical Center clinics for a 1/2 day each month:

Not Interested

Highly Interested

1 2 3 4 5 6

b) To what degree would this contribute to your satisfaction as a practitioner:

Not At All

Very Much

1 2 3 4 5 6

23. Has your spouse found it difficult to adjust to your community:

Very Difficult

Very Easy

1 2 3 4 5 6

24. Has your spouse found pursuing career opportunities:

Very Difficult

Very Easy

1 2 3 4 5 6

25. a) Are there any resources or programs that could be made available to increase your spouse's satisfaction with living in your practice area:

Yes

No

b) If yes, what:

26. Would it be helpful for the University to provide education/information to to your community concerning:

Not Helpful

Very Helpful

a) Excessive night call	1	2	3	4	5	6
b) Acceptance of your lifestyle	1	2	3	4	5	6
c) Your need for continuing education	1	2	3	4	5	6
d) Your problem of living in a "fish bowl"	1	2	3	4	5	6
e) Your need for an adequate clinic or office	1	2	3	4	5	6
f) Other _____						
_____	1	2	3	4	5	6

27. Would it be helpful to have the University assist you in establishing satellite clinics to serve isolated geographical areas:

Not Helpful

Very Helpful

1 2 3 4 5 6

28. Would you find it useful to have an office at the University to help you obtain library reference material:

Not Useful

Very Useful

1 2 3 4 5 6

29. Would you find it useful to have a library service which circulates up-to-date articles and journals:

Not Useful

Very Useful

1 2 3 4 5 6

30. In your current situation, do you find making referrals:

Very Difficult

Very Easy

1 2 3 4 5 6

31. How would you rate the follow-up you receive from patient referrals:

Unsatisfactory

Very Satisfactory

1 2 3 4 5 6

COMMENTS _____

32. a) Would you find it useful to have an office which would be available to coordinate referrals to the University Medical Center:

Not Useful

Very Useful

1 2 3 4 5 6

- b) How often do you think you would use the above service:

Weekly

Twice a Month

Monthly

Less than Monthly

- c) Which of the following would best facilitate your referrals to the University Medical Center:

Not Useful

Very Useful

- 1) a non-physician coordinator who would contact the appropriate specialist

1 2 3 4 5 6

- 2) a physician contact who would coordinate referrals

1 2 3 4 5 6

- 3) a panel representing the major specialties

1 2 3 4 5 6

33. In the past, how interested has the University Medical School been in you and your practice:

Not Interested

Highly Interested

1 2 3 4 5 6

34. a) Have there been any projects at the University that have assisted you in your practice:

Yes

No

b) If yes, please list:

35. COMMENTS

A SURVEY OF NATIONAL HEALTH SERVICE CORPS AND PRIVATE PHYSICIANS

For the past three years, the University of New Mexico has been involved in a project to provide clinical support services and continuing medical education to National Health Service Corps physicians in New Mexico and southern Colorado. Part of the project has been devoted to research into physician satisfaction with rural practice and ways the medical center might intervene to improve the degree of satisfaction.

The focus of the research over the past year has been the development of a standard questionnaire that might be used by any medical center to identify services that the center could provide to rural practitioners.

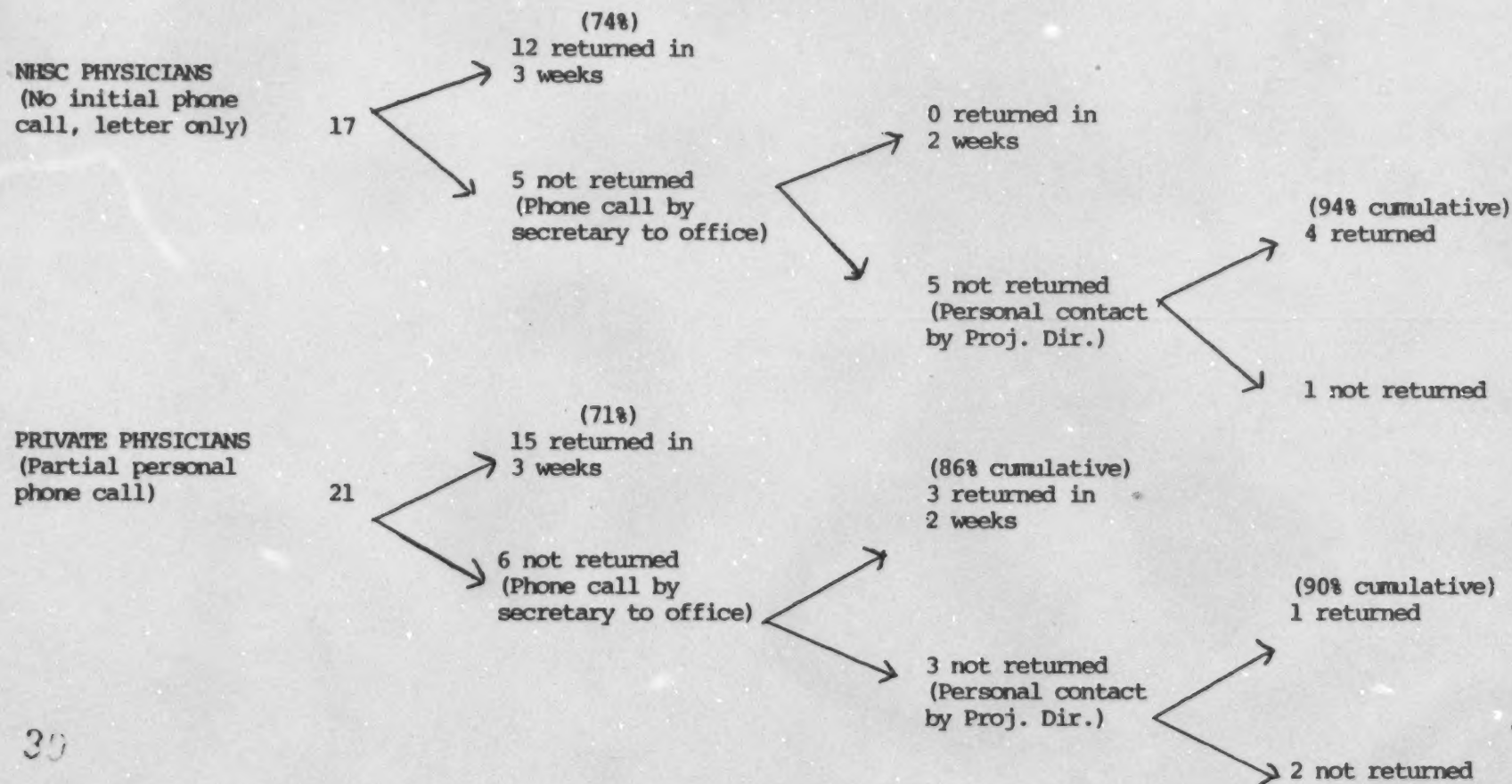
The questionnaire was developed based on ideas gleaned from our intensive literature search, our previous studies with NHSC personnel, and several meetings between the research staff and providers in the field. Particular attention was paid to making the questionnaire brief and easy to complete.

The questionnaire was distributed to 17 NHSC physicians and 21 private physicians who were either graduates of University of New Mexico programs or involved in the University of New Mexico student preceptorship program.

The instrument was well received; 92% responded. Figure 1 depicts the steps taken to arrive at the high results. A certain amount of personal contact was necessary, but that would be part of any effective clinical support system anyway.

FIGURE 1

FLOW SHEET OF QUESTIONNAIRE RETURNS



There were very few negative comments concerning the design of the questionnaire. A number of questions concerning spouse satisfaction, cultural aspects of medical care, management planning for clinics were deleted from the final questionnaire because the selected physicians showed very little interest in these topics. The final revised questionnaire is included at the end of this appendix.

A brief summary of the results of our pilot effort are included to give some idea of potential directions for a clinical support services. A full report may be obtained by writing the project office at the University of New Mexico.

CLINICAL SUPPORT

The majority of both groups of respondents indicated that it would be very useful for the University of New Mexico to facilitate locum tenens for their practice. This suggestion arose in a number of areas and in response to a variety of questions and is, therefore, identified as being a major area for future exploration and policy/curriculum decisions.

The overwhelming majority of both groups surveyed indicated that it is easy to make patient referrals, but they found far less satisfaction regarding the follow-up they received from such referrals. Many physicians also indicated that patients are not returned to them after a referral has been made, but the data available were not adequate to make any assumptions about why this is so and it is recommended that this area be explored further. Some private physicians indicated displeasure with their patient referral experiences at the UNM Medical School. It would appear that there is a pressing need for a coordinated referral system which includes

238
a viable and efficient means of feeding information back to the referring physicians. It is recommended that an office be established at the UNM Medical School which would coordinate referrals to the Medical School and feed information back to the referring physicians.

CONTINUING MEDICAL EDUCATION

An interesting discrepancy exists between respondents' answers to a question concerning the ease of obtaining CME credit, as opposed to another question regarding their ability to keep abreast of medical advances. Although the overwhelming majority of both groups responded that it is easy to obtain CME credit, 43% of the NHSC physicians and 42% of the private physicians indicated that it is difficult to keep abreast of medical advances. This raises a serious question about the relevancy and effectiveness of the CME programs that have been offered to date. Implications for the structuring of future CME programs are important: if traditional CME programs are inadequate to meet physicians' needs, and if CME is seen primarily as a means of fulfilling requirements to retain licensure, rather than providing relevant training and knowledge, alternative approaches should be explored. Suggestions offered by some respondents include individually designed programs based on the expressed needs of physicians, mini-residencies, distribution of video-taped grand rounds, individualized post graduate clinical training at a medical school, seminars with "hands-on" clinical experience, etc.

Respondents also indicated that it would be helpful to receive Spanish language instruction, and it is recommended that the UNM Language Arts Department offer an intensive one-week course in conversational Spanish,

geared primarily to medically-related areas of concern.

Participants in this survey did not respond with much enthusiasm to questions regarding the helpfulness of CME programs that would address management planning, spouse adjustment, or cultural issues.

There was a difference of opinion between the two groups of respondents regarding the usefulness of on-site audio/visual CME presentations. Seventy-five percent (75%) of the NHSC physicians indicated that such offerings would be very helpful, while only 27% of the private physicians expressed interest in such presentations.

The pattern of unenthusiastic responses to questions about the potential usefulness of telephone conference journal clubs, audio tape presentations and studio-prepared instructional video-tapes may not be an accurate reflection of potential usefulness. Rather, this may be an indication that physicians have not been able to secure such offerings in the past, that they do not have access to the necessary equipment, or that information regarding the availability of such presentations has not been circulated. Lack of exposure or inability to secure such offerings could very easily dampen enthusiasm for future potential and usefulness.

PRECEPTORSHIPS, HOUSE OFFICERS, ATTENDING IN THE UNM CLINICS

Responses to questions dealing with preceptorships by medical students and house officers may be somewhat biased due to the fact that the physicians participating in this survey are recent graduates of the UNM Medical School, and/or those who have served as preceptors. Seventy-five percent (75%) of the NHSC and 95% of the private physicians expressed current interest in being a preceptor for a fourth year medical student or house officer,

indicating that this would contribute greatly to their satisfaction as practitioners. It can be inferred from this positive response that these physicians found their previous experience as preceptors to be beneficial and rewarding, and it is recommended that this be further explored and expanded upon in future CME and clinical support programs.

SPOUSE SATISFACTION

The majority of respondents in both groups indicated that it was easy for their spouses to adjust to their present community. Neither of the groups identified any resources or programs that could be made available to increase their spouses' satisfaction with living in their practice area.

However, 61% of the NHSC physicians indicated that their spouses have found it difficult to pursue career opportunities in their present locations, while only 21% of the private physicians identified this as an area of concern.

It is recommended that further use of this instrument be expanded upon to include distribution of the questions pertaining to spouse satisfaction to physicians' spouses, under separate cover, in order to determine whether there are differences in perception between the respondent and his/her spouse.

PHYSICIAN-MEDICAL CENTER RELATIONSHIPS

The majority of private physicians and many of the NHSC physicians didn't think it would be helpful for a medical center to provide education/information to their communities regarding excessive night call, acceptance of their lifestyle, the problems of living in a "fish bowl", and their need for an adequate clinic or office. (However, at a recent NHSC seminar held in Santa Fe, physicians in attendance indicated concern about the

problems of living in a "fish bowl", and it was in response to this that the question was included in the questionnaire.)

An area of great interest is library services, both in terms of securing reference materials and the circulation of current articles and journals. Respondents overwhelmingly supported the concept of UNM providing such services and indicated that they would find it extremely useful.

In response to a question about the physicians' perceived relationship with UNM, 63% of the private physicians and 50% of the NHSC physicians indicated that the University did not seem to be terribly interested in them. This reflection of dissatisfaction, coming from a group of physicians who are considered to be "friends" and are in relatively close contact with the University, is disturbing and indicates that a more extensive survey could conceivably reflect a higher rate of dissatisfaction. On the other hand, 87% of the NHSC physicians and 53% of the private physicians responded affirmatively to a question pertaining to projects offered by the University that have assisted them in their practice. Therefore, it would seem that there is some discrepancy between the assistance offered through CME and instructional programs, and a feeling of personal contact between the physician and the University.

SUMMARY

The results of the initial survey indicate that, with minor adjustments and modifications, the instrument is both useful and effective. Certain questions have been re-worded for clarification, and others have been eliminated (as previously indicated). Although the questionnaire was

administered as an anonymous instrument, none of the respondents indicated that their responses would have been different had it not been anonymous, and as a result the final instrument will include an identification of the respondent.

Although the respondents were given ample opportunity to comment on the questions included and delete any that they deemed to irrelevant or inappropriate, none of the respondents indicated a desire to change the questionnaire. The only comments that were offered were extremely positive and supportive of the instrument.

APPENDIX C

A. Self-Assessment Programs

1. Pre-Test Family Practice Assessment Program
P.O. Box 330
71 South Turnpike
Wallingford, Connecticut 06492

This pre-test examination program is designed to help physicians who are interested in self-assessment in preparation for either certification or recertification by the American Board of Family Practice. It includes 180 multiple-choice questions and 8 latent image patient management cases. An answer booklet comes with the test, and there is a computer scoring service that gives percentile ranking.

Fee: \$20.00

2. Physician's Evaluation and Educational Review II
Sponsored by the American College of Emergency Physicians
3900 Capital City Boulevard
Lansing, Michigan 48906

This test covers 13 areas in clinical emergency medicine with 263 multiple-choice questions with charts, illustrations, photographs, roentgenograms, electrocardiograms, and case histories. May be self and/or computer scored.

Fee: \$100.00

3. Core Content Review of the Connecticut and Ohio Academies of Family Physicians

Arthur N. Schuman, Director
Core Content Review Project
Connecticut and Ohio Academies of Family Practice
179 Allyn Street Suite 304
Hartford, Connecticut 06103

Multiple-choice questions and simulated patient management problems. Approved for 18 hours of prescribed American Academy of Family Physicians credit.

Fee: \$60.00

4. Medical Knowledge Self-Assessment Program V
American College of Physicians
4200 Pine Street
Philadelphia, Pennsylvania 19104

800 multiple-choice questions plus simulated patients covering 10 subspecialty areas of internal medicine sent out over a 9 month period with computer scoring. Approved for 105 hours of American Medical Association CME credit.

Fee: \$150.00

5. Personal Assessment for Continuing Education (PACE 8)
Department of Educational Affairs
American Academy of Pediatrics
1801 Hinman Avenue
Evanston, Illinois 60201

A study program offered by the American Academy of Pediatrics designed for pediatricians in practice. It contains multiple choice questions and patient management problems with an answer sheet and key, discussions, and references. Approved for 10 hours of AMA CME credit.

Fee: \$75.00

6. Clinical Simulations: Selected Problems in Patient Management
Department SK
Appleton-Century-Crofts
292 Madison Avenue
New York, New York 10017

20 clinical simulations in 424 pages using latent image techniques. The cases, both major and minor, are so varied and challenging as those met in daily practice.

Fee: \$23.50

B. Self-Assessment and Practice Evaluation

1. University of Wisconsin Individual Physician Profile

Individual Physician Profile
University of Wisconsin Extension
Department of Continuing Medical Education
Room 465 WARF Building
610 Walnut Street
Madison, Wisconsin 53706

There are three parts to this program:

- a) Profile: The physician records data on a tape recorder on all patients seen during four different days in a month. From this, a practice profile is developed. Fee: \$35.00
- b) Testing: A test of 125 questions based either on the profile or if profile is not obtained on a composite Family Practice profile. It has an answer sheet included plus the program scores and analyzes the results. Fee: \$20.00
- c) Consultation: An educational consultant will call you after examining the profile and test results to help plan a personal continuing education program. Fee: \$25.00

C. Your Personal Learning Plan

1. Illinois Council on Continuing Medical Education
55 East Monroe Street Suite 3510
Chicago, Illinois 60603

This short booklet helps you organize most effectively the limited time available for CME.

Cost: \$3.00

APPENDIX D

CERTAIN EDUCATIONAL CONCEPTS

I. Developing Learning Objectives

It is one thing to have identified a deficiency, it is another to develop specific learning objectives that lead to improved practice. The most important first step is to determine the type of learning or behavioral change desired: knowledge, diagnostic-operative skills, problem-solving skills, or attitudinal change.

- A. Knowledge: To internalize new facts, concepts, principles relevant to the practitioner's practice.
 - e.g. What antibiotics are most appropriate in the pediatric age group.
 - e.g. What are the common causes of chronic arthritis and its differential diagnosis.
- B. Diagnostic-operative skills: To be able to perform specific tasks in a new manner.
 - e.g. How to perform peritoneal lavage after blunt abdominal trauma.
 - e.g. How to fit contraceptive diaphragms.
- C. Problem-solving skills: To be able to analyze a problem, identify relevant data, and reach appropriate conclusions.
 - e.g. How to evaluate intra-uterine growth retardation.

D. Attitudinal changes: To become more comfortable managing certain difficult problems.

e.g. To become more comfortable treating alcoholics.

e.g. To become able to counsel a dying patient.

At the same time that it is important to determine the behavioral change desired, it is also important to relate it to specific content area. It is not enough to say to help the participant acquire new medical knowledge. That is inappropriately vague; the objective should be as specific as possible and thus depends on a great extent on the depth of the needs assessment evaluation that was made before. For instance, one could say the objective is to help the participant acquire knowledge of the appropriate use of antibiotics in the pediatric age group.

II. Choosing An Appropriate Format

The attached table lists a variety of educational approaches that can be used to provide continuing medical education. Each approach has its strength and weakness. Each is more appropriate for certain types of learning.

To go through the table briefly, reading in general is an efficient way to learn new facts. One can have a reading program that covers a broad area such as reading a certain number of journals on a regular basis or it may be very objective-specific such as asking for a literature search on a specific disease and reading those articles in depth. Reading is usually a solitary activity; however, a well organized journal club that shares important articles from a variety of sources can be a stimulating way of keeping abreast of medical developments. The PROMIS Clinic in

Hamdton Highlands, Maine, subscribes to the JAMA only and the doctor on call each weekend reads the abstracts in the back of the journal and sends for reprints of significant articles.

The lecture approach is also a method for acquiring knowledge. Audio digest programs or similar taped recordings are ways for an individual to learn facts by the oral method. Most traditional CME programs follow the lecture approach. Since most of us are familiar with this, it is not necessary to discuss it further except to mention that the lecture can take cold facts and make them come alive. It is the experience and the understanding of the teacher that can make the lecture approach effective. It can also be a way to keep participants abreast of rapidly changing information that has not made it into print. However, it is important to remember that the more passive a student is in a teaching program the less he will take away from the exercise. And we all know that too high a proportion of lectures are dull, overly complex, or irrelevant to our needs; yet this is the most common format for CME.

Repetition is usually frowned upon as a learning approach. However, in certain situations it can be very beneficial when students need to learn how to perform stereo-typed skills. An example is the American Heart Association's Cardio-pulmonary resuscitation course. Their approach is that physicians should develop automatic reflex actions to deal with cardio-pulmonary emergencies. They find that by repetition the physician and/or lay person can very quickly respond appropriately to an emergency

situation. On an individual basis, many program medical instruction texts seem to focus on repetition of basic material.

In the discussions/workshop approach the resource person interacts with the learner. This can be done on an individual tutorial basis or on a group basis. These approaches are particularly suited for learning objectives relating to developing new attitudes and problem-solving skills. For instance, a physician who wants to learn more about simple psycho-therapy could form a working relationship with a psychiatrist and discuss selected case problems with his tutor. Workshops are not easy to conduct. They take time to organize and to plan. The leader has to outline the problems under discussion and make sure that everybody participates within reason and that it is a group discussion rather than a dialogue between two people. He must also summarize points as they are made and keep the discussion flowing from topic to topic. In addition, he may have to provide a knowledge base to the group. In the University of New Mexico's NHSC/CME Project, we found a technique of using a team of a family practitioner and specialist consultant worked particularly well. The family practitioner served as the group leader setting the tone of the workshop, identifying the topics, and creating the conditions for an effective dialogue. The specialist served as a resource person to introduce new points, new techniques, new knowledge to the group and clarify situation when people became confused. Another advantage of having the family practitioner to act as a group leader was that it kept the specialist from presenting material too esoteric for the practitioners.

Demonstrations are the method for showing others how to perform certain procedures. This can be done by video tape or a workshop demonstration.

Practice sessions are an extension of the demonstration process in which the learner actually participates in performing the procedure. Examples might include an individual doing a mini-residency in an orthopedic clinic where he could learn to cast simple fractures. Workshops can also include practical "hands-on" experience where the attendees can practice inserting IUD's into plastic models, practice suture techniques on pig skin, or exam a series of patients with neurologic deficits. Certainly, this method would be an important approach to solving learning problems related to learning new skills. The symposium on continuing education for the NHSC stressed the value of mini-residencies for keeping physicians up-to-date particularly in learning new skills and in maintaining contacts with the University medical center. At the University of New Mexico, we encourage physicians to participate in mini-residencies and most of them have found it a particularly fruitful way to learn.

The final area listed in the chart is research. We often forget that some of the best learning takes place during a concentrated study of a particular problem. This can include an individual practitioner selecting a problem within his practice and carrying out simple descriptive research or therapeutic trial as sophisticated as he feels like doing. It can also include ones participating in a research project at a nearby institution. Probably all methods of learning including literature review, discussion with a tutor, and practical experience would be necessary before the research project could get under way; but the results in terms of understanding the situation would be commensurately greater. Carrying out individual research would be parti-

cularly important for physicians who have a sense of pride in their work and a sense of wanting to maintain a University type of sophistication in their personal medical practice.

Thus, there is a wide variety of educational approaches which can be used by your NHSC/CME Project to help the physicians in the field stay current with modern medicine. Different physicians will have different needs and different ways of wishing to have those needs satisfied. It is the role of the CME Project to try as much as possible to identify those specific needs and to develop a program that is specific for the physicians.

	<u>INDIVIDUAL</u>	<u>GROUP</u>
Reading	Reviewing journals Text books Literature search	Journal Club
Lecture	Audio digest	Traditional CME program
Repetition	Programmed instruction program	Programmed group instruction (Cardio-pulmonary resus- citation)
Discussion/workshop	Tutorial	Workshop
Demonstration	Video	Workshop demonstration
Practice Session	Mini-residency	Workshop with practical hands-on experience
Research	Conduct research within confines of the clinic	Participate in an ongoing research project